

What is claimed is:

1. A urethane prepolymer, which is impregnated into or coated onto a supporting layer to make an adhesive polymer for an adhesive material of a printing relief, is determined by the following chemical formula [I]:

A-O-CONH-B-NHCO-

$$\begin{aligned} & -\{[O-C_pH_q-(O-CO-C_rH_s-CO-O-C_pH_q)_t-O-CONH-B-NHCO]_r-(O-D-O-CONH-B-NHCO)_v- \\ & -\{O-C_pH_q-(O-CO-C_rH_s-CO-O-C_pH_q)_t-O-CONH-B-NHCO\}_u\}_w-O-E \end{aligned} \quad \text{.....[I]}$$

wherein A-O- is either one of a dehydrogenated remaining group selected from hydroxyalkyl(meth)acrylate, hydroxyalkyl vinyl ether and epoxide including hydroxy group; -B- is a depolyisocyanagated remaining group of organic polyisocyanate; $-O-C_pH_q-(O-CO-C_rH_s-CO-O-C_pH_q)_t-O-$ is a dehydrogenated remaining group of a polyester polyol having a number average molecular weight of 500-5000, of which p is a number of 1-36, q is a number of 2-72, r is a number of 10-34, s is a number of 20-68 and t is a number for making the number average molecular weight; -O-D-O- is either one of a dehydrogenated remaining group selected from alkylene glycol, dimer diol, diol including ester group, diol including carboxy group or the foregoing $-O-C_pH_q-(O-CO-C_rH_s-CO-O-C_pH_q)_t-O-$; -O-E is either one of a dehydrogenated remaining group selected from alkyl alcohol, hydroxy carboxylic acid or hydroxy carboxylic acid ester, or is identical to the foregoing A-O-; and u is a number of 1-50, v is a number of 0-50, and w is a number of 1-10.

2. The urethane prepolymer as determined in claim 1 characterized that a number average molecular weight thereof is 3000-100000.

3. A spray comprising a can containing said urethane prepolymer with high pressure liquid gas for spraying.

4. An adhesive material, to fix a relief resin film onto a printing base of a printing machine, comprising a supporting layer and adhesive polymer polymerized and cured from said urethane prepolymer impregnated into or coated onto the supporting layer.

5 The adhesive material according to claim 4 wherein said impregnated or coated urethane prepolymer is performed with a spray or a hot-melt coat.

6 The adhesive material according to claim 4 wherein said adhesive polymer is applied onto one side or both sides of said supporting layer through said impregnated or coated.

7. The adhesive material according to claim 4 wherein said adhesive polymer is applied onto both sides of said supporting layer and a shore A hardness of each adhesive polymer is a degree of 20 to 80 and a thickness thereof is 0.005 to 15mm.

8. The adhesive material according to claim 4 wherein said supporting layer is one selected from a paper, a woven fabric, a non-woven fabric, a polyolefin resin film, a polyester film, a porous resin film and a cellulose base film strengthened with a resin.

9. The adhesive material according to claim 4 wherein said supporting layer is elastic.

10. The adhesive material according to claim 4 wherein said supporting layer is a foam film having a compressible elasticity.

11. The adhesive material according to claim 4 wherein said supporting layer is sheet-like and has a tensile strength of at least 1000 N/cm² and a thickness of 0.03 to 25 mm.

12. A printing relief, to be fixed onto a printing base made of a metal in a printing machine, comprising a relief film made of a resin and an adhesive material of which an adhesive strength to the metal is stronger than to the resin.

13. The printing relief as set forth in claim 12 characterized that the adhesive material is same to claim 4.

14. The printing relief as set forth in claim 12 characterized

that a shape thereof is cylindrical.